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Efficient 266 nm Ultraviolet Beam Generation in K₂Al₂B₂O₇ Crystal

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Abstract. The ultraviolet beam at 266 nm was obtained by fourth harmonic generation of 1064 nm Nd:YAG laser radiation through a nonlinear crystal K₂Al₂B₂O₇ (KABO). The fundamental frequency of a flash-lamp pumped Nd:YAG laser was doubled in a β -Ba₂B₂O₄ crystal to generate a second harmonic output at the wavelength of 532 nm, and then doubled again in the KABO crystal to generate the fourth harmonic output at 266 nm. The optical conversion efficiency from 532 to 266 nm was investigated for the first time, and 13% was achieved.

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